

ASBP *Communication*

(Official Publication of the Association of Systematic Biologists of the Philippines)



Volume One, No. 2
December, 1987

ASBP COMMUNICATION

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ASBP COMMUNICATION is the official publication of the Association of Systematic Biologists of the Philippines (ASBP). It is sent free of charge to all members in good standing.

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ASBP COMMUNICATION, c/o Association of Systematic Biologists of the Philippines
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PROCEEDINGS OF THE ASBP SYMPOSIUM "DEVELOPING A STRATEGY FOR A NATIONAL BOTANIC GARDEN IN METRO MANILA"

I. Morning Session:

The activity began a few minutes after 9:00 o'clock in the morning with Dr. Domingo A. Madulid, the re-elected President of the Association making the opening remarks to formally open the symposium, emphasizing on the importance of plants in the environment and to mankind as a whole. Mr. Pedro C. Gonzales, Curator of the Zoology Division delivered the welcome address, in lieu of the Assistant Director of the National Museum who was then away at the time. Dr. Romualdo M. del Rosario briefly introduced the Key-note Speaker, Dr. Victor Ordóñez, the Deputy-Minister of the Ministry of Education, Culture and Sports, a noted champion for culture and who has been one of the most prominent figures in the government to sit at two of the most sensitive positions in different ministries.

Dr. Ordóñez, in his speech stressed the importance of the recently ratified Constitution of the Republic of the Philippines citing two (2) provisions: Section 17 of Article II which gives importance and priority to education, science and technology, arts, culture and Sports. The other provision, Section 2, Article XIV deals with the state regulation of the transfer and promotion of the adaptation of technology from all sources for the national benefit. Before closing his speech, Dr. Victor Ordóñez cautioned the symposium participants and those who will work to achieve the goals for this particular objective not to be devisive and fragmented in the pursuance of their objectives, but to work closely together to realize their goals.

Right after the keynote address was given, the new set of officers for 1986-1988 were then inducted into office. In the presentation of papers for that morning, Dr. Jose Velasco narrated the "History of the Philippine National Botanic Garden which was established in the island of Basilan, Mindanao. He was then followed by Mrs. Evelyn Pantig of the Philippine Tourism Authority, who gave a short talk on "The Role of Botanic Garden in the Promotion of Tourism in the Philippines." She reiterated her view that tourists are enticed to come to many scenic spots not only to relax but also

Held at the Master's Hall, National Museum Manila on February 14, 1987.

to learn of the country they visit. They prolong their stay in one country depending on the additional facilities that the country could offer, because it is one way by which they come to appreciate the things in nature which are otherwise altered in many developing countries, thus making their home countries a concrete jungle.

To drive home her point, she gave concrete examples of places around the world where the development of their tourists spots are geared towards the preservation of the natural environment. She mentioned the scenic botanic gardens of New Zealand, Singapore, Malaysia and Hawaii. She related botanic gardens as an enhancement of the environment.

Dr. Jose Vera Santos, Professor Emeritus of the Department of Botany, University of the Philippines presented his talk with colorful slides of various botanic gardens around the world, which was highlighted by those of the United Kingdom, Malaysia, Singapore, Indonesia, Hawaii, Japan and our very own National Botanic Garden situated in Real, Quezon, which now is in a sad state of neglect, due to lack of support from the government.

II. Afternoon Session.

After lunch the various invited guests and discussants from various sectors and the members of the ASBP trooped back to the Masters' Hall to resume the sessions. Dr. Paciente A. Cordero, Jr. explained the guidelines to be followed to resolve the following points: location, manner of management, identification of lead and member agencies that will formulate measures in the setting up of a National Botanic Garden, and the creation of an Ad-hoc committee who will frame the guidelines for the establishment of the National Botanic Garden, and finally, the presentation of valid resolution for adoption of the body.

Dr. Zenaida Zierra, representing the National Botanic Garden in Real, Quezon discussed the very first Botanic Garden that was established during the Spanish Period. She defined and gave the true functions of a botanic garden. She, however, lamented the gross neglect by the government in not giving its full support to the botanic garden in existence, that is now plagued by problems for its survival. Among the invited panel discussants, only Mr. Anton Claro, the former President of the Fern Society of the Philippines was present. He sincerely believes that the National Botanic Garden must be functional and self-reliant for it to survive.

Mr. Juan Berenguer, Manager of the Sharp Travel Agency in Makati started it all when he wrote an article in one of the morning dailies calling for the conversion of the Muni Golf Course situated along the moat of Intramuros into a botanic garden. This same article caught the attention of Dr. Romualdo M. del Rosario who called him up to discuss with him the feasibility of establishing a national botanic garden in Metro Manila. Mr. Berenguer strongly believes that the present Muni Golf Course is a very expensive piece of real property that caters to the needs of a limited few.

Mr. Antonio Padilla, the President of the Fern Society of the Philippines, explained that the country supports a very rich variety of flora which is rapidly disappearing at a very alarming rate due to illegal logging, and kaingin. Pollution has greatly affected the disappearance of a great many species of exotic species. He ended his observation by stating that "we lacked the needed appreciation for things that are at our finger tips."

Mr. Inocencio R. Ronquillo, Assistant Director of the Bureau of Fisheries and Aquatic Resources, related his travel experiences abroad on several occasions to represent the country at various conferences and fora. He made mention of several places both in Europe and the Americas where he saw for himself the well-trimmed and well-kept botanic gardens that is fully stocked with exotic tropical plants. He was greatly awed by existence of century-old trees in some botanic gardens that were so old and so huge in diameter. In closing, he mentioned three (3) possible areas where he believes the botanic garden should be established. These are, 1. the re-establishment of the Sunken Gardens behind the City Hall; 2. the Benigno Aquino Garden (formerly BFD Nature Center in Quezon Cityland, 3. the Campus of the University of the Philippines in Diliman.

Mr. Edwino Fernando of UPLB, insisted that the "botanic garden should be first and foremost a scientific institution, and secondarily a tourist attraction." At this point, Mr. Berenguer firmly agreed to the suggestion and said "our priority should have a higher social impact (on the pedestrian) rather than on the rich people who commutes daily in an air-conditioned car."

Ms. Joy Madrid of Baguio suggested that "the ad-hoc committee must present a definite proposal on where, how and who will support the project." Mr. Juan Liwag made the following observations: (1) The Muni Golf Course is only suitable for a specific type of botanic garden, an educational type where the area of ca. 5 hectares will be sufficient; (2) the Benigno Aquino Garden has ade-

quate space allotment for the purpose; (3) the campus in U.P. Diliman is suitable, but additional infrastructural rises may make the location unsuitable; (4) the La Mesa Dam in Novaliches has a very limited space, and if the botanic garden were to be established there, the public may abuse the area and may pose an additional hazard for pollution, which is most probable to happen

One individual suggested the utilization of portions of military camps such as Fort Aguinaldo and Fort Bonifacio, but these places are not open to the public. Dr. Z. Zierra suggested the open space near the NSTA but Dr. Vera Santos believes that funding must have the paramount consideration.

Dr. Madulid explained that the composition of the ad-hoc committee shall come from various government agencies like NSTA, NRCP, BFD, ASBP, MOT, NM and NPDA. On the private sector different groups like the Fern Society of the Philippines, the Philippine Orchid Society, The Makati Garden Club and other equally interested groups may join the committee to thresh out the matter before resolutions can be formalized. At the instance of Dr. Madulid he suggested that the ad-hoc committee shall convene at a later date so that all considerations can be lengthily discussed to arrive at resolutions that can be submitted to the proper authorities.

After the discussions were summarized, there being no additional agenda to be taken up, the symposium came to an end a few minutes after three o'clock in the afternoon.

Prepared by:

Jaime Cabrera

Assistant Secretary

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ON DEVELOPING A STRATEGY FOR A NATIONAL BOTANIC GARDEN IN METRO MANILA*

D. A. Madulid **

In behalf of the Association of Systematic Biologists of the Philippines I wish to welcome all of you to this Symposium on Developing a Strategy for a National Botanic Garden in Metro Manila. Today is St. Valentine's day — a special day for lovers, and what appropriate day it is for us to gather here to express our love for nature and for plants, in particular, by finding a home for them in a botanic garden situated in Metro Manila.

While it is true that there are some gardens existing in the Metropolis today, they could not be called botanic gardens in the real sense of the word. A botanic garden is a place where plants are systematically planted and maintained primarily for scientific study and education, and secondarily for recreation and public enjoyment. It is, therefore, different from the concept of a public park like the familiar Luneta Park in Manila and the Quezon Memorial Park in Quezon City.

Historical records show that there were early attempts to establish a botanic garden in Manila. Unknown to many people the first botanic garden was established about 1791 in Malate, on the vicinity between what is now Wright Street and Indiana Street. In this garden was erected the grand monument of Antonio Pineda, naturalist of the Malaspina expedition. As years passed the botanic garden became neglected and during the American occupation it was totally abandoned. A second botanic garden was erected in 1858 in a site near the Pasig river, fronting what is now Arroceros St. For some years this botanic garden was well-maintained by the Spanish directors but it gradually degenerated through time. During the American regime it was again rehabilitated by John Mehan, an American Army Officer, and for sometime it became a popular site for Manilans. However, the Mehan Garden, as it was popularly called then, did not withstood the test of time, just like the first botanic garden in Malate. Several factors were responsible for its ill-fate. For one, it was located in a low,

* Opening remarks at the symposium on "Developing a strategy for a National botanic garden in Metro Manila." Held at The National Museum on 14 February, 1987

** President, ASB

swampy, rice-paddy land which is just a few feet above sea level. It is, thus, subject to frequent flooding during the rainy season. During high tides the place is inundated by water spilling out from the Pasig river situated just near the garden. Under these conditions comparatively few plants can thrive. Only those adapted to prolonged water logging will survive and there were only a few species with this character. The durable rain tree, *Samanea saman* is one of these species and these huge trees used to dominate the landscape of the old botanic garden.

Today, Mehan Garden is converted into a cemented open auditorium, and commercial stalls selling plants and handicrafts. Only the bust of Sebastian Vidal, former Spanish Director of the botanic garden remains as a marker to what used to be a famous institution in old Manila.

It is unfortunate, indeed, that at present Metropolitan Manila has no national botanical garden of its own, despite previous attempts to establish one. Its absence is felt more strongly at this time when Manilans feel the ill-effect of highly-polluted air of city streets, and when they would like to commune with nature to forget personal problems. Aside from the scientific, cultural and educational values of a botanic garden — are other amenities only botanic gardens could provide. People in Metropolitan Manila felt the need and are presently clamoring for a botanic garden situated in the metropolis or its immediate vicinity.

It is within this context that we are all gathered here today to develop a strategy for a national botanic garden in Metro Manila. Your individual concepts and ideas about the location, administration, funding and logistics of a national botanic garden will be most useful in arriving at a decision by this august body. I hope that by the end of this day we will be able to come up with resolutions on what course of actions to take so we will be guided accordingly.

Let us come out with a strategy and resolutely strive to attain this goal in the near future. Thank you very much.

THE PHILIPPINE NATIONAL BOTANIC GARDEN*

Jose R. Velasco**

The nature and objectives of a garden

Before presenting our experience in putting up a botanic garden, let me digress and consider some peripheral matters connected with a botanic garden. A garden is essentially a collection of various species of plants. The collection may be guided by one or a few of the following objectives: (1) Religious. The ancient garden, especially in Japan and other countries of the East, started out as a burial ground of illustrious leaders of the place. It was a hallowed place, which formed part of the practice of ancestral worship. The trees in it, such as the Bo tree, were intended to serve as parks. In crowded cities, a need is felt for a place where people can breathe fresh air and relax; at the same time get acquainted with the various species of plants. (2) Utilitarian. Since early times, there have been gardens maintained for some specific uses. For example, the herbalists kept gardens of medicinal plants. At present local gardens are essentially nurseries selling ornamentals and planting materials for the orchard. In Europe and the United States aesthetic gardens are maintained for the fees which are collected at the gate. (3) Floristic. The gardens which were started during the Renaissance were essentially a collection of the plant resources of the place or region. A few of the species were facing extinction, or were peculiar in some respect; so they were collected in order to be preserved. Since science was not yet on firm footing, the collection was more of a curiosity for naturalists. (4) Scientific. The recent trend is to convert all gardens into a scientific botanic garden, or inject some scientific aspects in them. The general trend is to arrange the garden along taxonomic lines; complementarily, some gardens are laid out according to ecological considerations; and still others are equipped for controlled studies in plant breeding, in plant physiology, or in horticulture (including flori-culture). We see experiments in plant introduction, in the production of new forms or breeds, in adaptation or acclimatization and in many other areas.

* Paper presented at the symposium on "Developing a Strategy for a National Botanic Garden in Metro Manila" held at the National Museum on 14 February, 1987.

**Member, National Academy of Science

However, the underlying objective of modern botanic gardens, (worthy of the name) is to collect and preserve various species in a herbarium and/or in culture. In general, the focus of the collection is on indigenous species; however, introduced species are also collected for their historical interest, for adaptation and for enlarging the gene-pool.

Background of the National Botanic Garden

The garden was an offshoot of a few fortuitous or unplanned circumstances. In the first place, the grant by Congress to the U.P. (in 1930) of 10,000 hectares could not be realized in Basilan because private settlers closed in on the U.P.-staked area before we could develop some 4,000 hectares. Hence, it became imperative to locate a likely alternative site for the remaining 6,000 hectares. The administration, to its credit, was able to persuade a logging concessionaire to relinquish to the U.P. its right to a forested area at the boundary of Siniloan, Laguna and Real, Quezon. This became designated as the U.P.-Quezon Land Grant.

Secondly, the U.P. "ill-advisedly" appointed the present writer as manager of the Land Grant. In turn, he invited Dr. Jose Vera Santos to make periodic visits to the area. Being of the same turn of mind and speaking the same language (i.e., the jargon of plant science), they saw the merits of the place as site for a botanic garden.

Thirdly, the present writer (by a stroke of luck) became appointed in 1967 as Commissioner of the National Institute of Science and Technology. This gave him opportunity to allocate funds for the botanic garden.

Fourth, additional funds for science became available starting in 1968 as a result of a law allowing a tax-levy on motor vehicles.

In conceptualizing the proposal for a National Botanic Garden, the two botanists considered the following observations:

- a. It is a pity; and rather disconcerting, that of all the countries in Southeast Asia, the Philippines is unique in not maintaining a botanic garden. The Spaniards, at the close of their colonial administration, started a Mehan Garden, but it was not viable. Subsequently, the Americans made an extensive study of the plant resources in the country; but they overlooked the need to maintain a botanic garden. Dr. Elmer D. Merrill made a name in Indo-Malayan botany through his studies of our flora, but it did not occur to him to start a botanic garden.

- b. The U.P.-Quezon Land Grant is a desirable site for a botanic garden because it is located in a dipterocarp forest, which is the main biome in the humid tropics. This vegetation is representative of the wet eastern side of the country from Cagayan in the north to Agusan and Surigao in the south.
- c. The road from Manila to the Land Grant passes through a very scenic portion of the country. From a promontory in the hills of Pililia one gets a view of Laguna de Bay and its delta, and that of Greater Manila on the northwest, (especially in the late afternoon and early evening) which fills the heart with no little amount of exhilaration. On the other hand, from the scientific standpoint, the change in vegetation (both natural and cultured) provides a panoramic shift from the semi-arid to the humid ecosystem.
- d. The distance from Manila (about 150 kilometers) is convenient for week-enders and for overseas visitors. With good road, a visitor can reach the place in two to three hours; make a few observations; and be back in the city on the same day. With more time the visitor can pass a pleasant night in the garden.
- e. The cool evening, the sound and smell of wildlife at night and the calm, unharried atmosphere are conducive to serenity and creative ratiocination.

Considering these good points, the two botanists decided to explore the reactions of colleagues, friends and possible supporters to the proposal of establishing a botanic garden in the place.

Plan of the National Botanic Garden

The garden is intended to be a repository of plant species both living and preserved. In other words, its key project is the development of an herbarium and an arboretum. The herbarium will, of course, be arranged along taxonomic lines. The arboretum (should we say, plantarium?) will be arranged along taxonomic lines, if feasible; but if situations demand, or the exigencies of a study require, some species may be grouped according to their ecological requirements, their aesthetic value, or other criteria.

An incidental objective is to make the garden attractive to scientists, and other creative or intellectual workers. This calls for a convenient accommodation and modest but pertinent facilities for the workers. As resources allow, seminars, workshops or dialogues may be sponsored.

In order to idealize the lay-out of the garden, Dr. Vera Santos tried to draw from his experience in his visits to various gardens. Moreover, he studied the lay-out of gardens from a collection of brochures in his library.

Difficulties encountered in establishing the garden

A botanic garden is evolved through the joint effort of many people from generation to generation. It is not a one-shot deal, nor a make-and-break effort. It must have a sustained funding, and the workers must have an abiding interest in its development. To start a garden without these essential ingredients is to invite certain failure. It is worse than not starting at all because (at least in the latter) the time and effort of many people and much resources would not have gone down the drain.

The people who made this attempt to establish the National Botanic Garden in the U.P. Quezon Land Grant minimized the foregoing consideration, hoping that they could stir up a breeze, if not a whirlwind of interest in it among the government leaders and the scientific community. In this hope, they were proven wrong.

Some of the impediments (besides the difficulty of getting funds for the garden) were:

- (a) The refusal of the Office of the President to grant title to the U.P. Land Grant. The writer could not get audience with the President's secretary in his attempt to plead the case for a title.
- (b) The logging contractors (just like illegal loggers) did not respect the prerogative of the garden personnel to decide what trees could be cut.
- (c) Speculative settlers did not respect the boundaries of the garden. They made clearings, wherever they pleased

Accomplishments

In the short span of time that the Garden was in operation, the following have been accomplished:

- a. There was established a fairly good herbarium, specializing on the flora of the vicinity.
- b. A dipterocarp collection and a fig collection (arboretum), palmetum, a fernery and a garden of medicinal plants have been started.

- c. A landscaped garden was evolved around the guest house and the office-laboratory building.
- d. Several orchid houses were built and filled with rare specimens and the hybrids raised from seeds by aseptic culture.
- e. Some of these orchids and some native ornamental species were sent to Lub Botanic Garden (Rumania) to initiate our bilateral scientific cooperation. This was at the instance of the Office of the President and our Ambassador to that country.
- f. The garden has hosted many botany classes from the U.P., Far Eastern University, Santo Tomas University and other private universities. It has entertained a few professors who did their study and writing in the guest house.

THE ROLE OF BOTANIC GARDENS IN THE DEVELOPMENT OF TOURISM IN THE PHILIPPINES*

Evelyn B. Pantig**

Before everything else, please allow me to congratulate the officers of the Association of Systematic Biologists of the Philippines on the occasion of their induction to office for 1986-1988.

It gives me great pleasure to be with you today not only because this is a reunion-of-sorts with a few here with whom I've worked in the past on different occasions and projects related both to your discipline and mine, but more so because I feel I share with all of you at least one common feeling, a love for plants, and though perhaps for different reasons, one wish to see the rise of a National Botanical Garden in Metro Manila.

This symposium is an excellent venue wherein we can bring to fore a new way by which we can put to best use one of our natural resources — our flora and pave an avenue for extending the benefits derivable from it to other sectors. This morning, I am to take up with you what botanic gardens can do to the tourism industry.

Tourism has become a by-word but little attention has been paid to what it really means or covers. It is synonymous with discretionary travel by individuals and families and, as such, should exclude travel for a reason other than pleasure such as for business, education or family visitation. However, travelers coming to a destination for intentions other than pleasure also, in most cases, make use of such an opportunity to see more of the country visited, thus, making them become tourists. For instance, a businessman coming to Manila would like to see more of Manila or other areas which meet his interest at the conclusion of his business, or a balikbayan who comes home for a visit takes up the chance to go and see some of our delightful places.

You see, tourism particularly from an economic viewpoint is a complex pursuit that affects and is affected by almost all sectors of the national life. It actually holds a unique economic

position in that it is the single activity that takes in a cross-section of possibly the entire economic structure. This is indicated by what the tourist does while visiting a destination. He needs transport to go from one place to another, needs a place to stay the night and places to eat. He also makes use of recreational facilities such as the natural attractions and the other visual and cultural expressions of the destination's people that come in such form as their music, dance, drama, museums, shows, meetings. In all these, every country which aspires for the growth of tourism as an economic sector must strive to give the tourist the best that it could offer. It is for this reason that we try and study very carefully the profile of our visitors to enable us to match our tourist products with what the type of visitors that we would like to have would be looking for.

The data that we have on file show that tourists come for different purposes — for holiday, for business, convention, health, official mission and others. Our most recent figures, as those in the past, indicate that the greatest percentage (at about 65-70%) of our foreign visitors come here for a holiday. For this reason, our tourist facilities and support activities must be geared towards satisfying the needs and wants of this type of traveller. This I would like to discuss with you in order to show the role that Botanical Gardens can play to help make tourism grow.

By tourist facilities, we are referring to transportation and accommodation which form 2 of the basic components that make up tourism. Support activities, on the other hand, are activities which actually fall under other socio-economic sectors but which can make or un-make a successful tourism program because they not only leave a major impact on the tourist experience but can also serve to increase tourism activities in a destination and increase the length of stay of travellers. And because this is so, it is considered imperative for tourism planning bodies to give attention to these activities' planning and development in the same manner and, ideally, extent as the tourism facilities development program.

One of the support activities that can enhance the visitation experience is a new opportunity area insofar as the Philippines is concerned — a national botanical garden.

We, in tourism recognize the many reasons that underscore the need for botanical gardens but I would like to concern myself now only insofar as they can affect the tourism industry. We be-

* Paper presented at the symposium on "Developing a Strategy for a National Botanic Garden" in Metro Manila held at the National Museum on February, 1987.

** Manager, Project Development Department, Philippine Tourism Authority, Rizal, Park Manila

lieve that botanical gardens can contribute to enhancing the industry, in such terms as increasing the volume of our incoming travellers and increasing their length of stay. Why do we think so?

Firstly, botanical gardens which can provide an opportunity for educational advancement and does constitute a scientific activity can have a significant tourist-drawing power because they stir up interest not only among visitors with a leaning towards the biological sciences but also in even the most unsophisticated of travellers.

I am no botanist myself but because plants have a way of transmitting an essence of tranquility and creating an atmosphere for relaxation, I could only delight at their sight and their company. This certainly cannot be an isolated feeling.

I am tempted to cite, at this point, the example of Christchurch, the capital of the province of Canterbury in New Zealand, which is very aptly called the Garden City because of the many beautiful gardens that abound in seemingly every place in the city. Christchurch is one of a few areas I know which takes its greenery quite seriously. Christchurch's 75-acre Botanic Gardens located in the eastside of Hagley Park, the city's largest park which contains exotic and native plants has emerged to become one of the most significant tourist attractions of the city. It is of note that west of the park is a place called Riccarton Bush, which is actually a reserve of vegetation representing the last trace of primary swamp forests.

Secondly, as we move towards urbanization, particularly here in Metro Manila, it becomes increasingly necessary for us to preserve our cultural heritage, if only for tourism purposes, and a botanical garden can be made to emerge as an important cultural resource, in the same manner that it has been made to become in many other civilized nations. These gardens can give our tourists, many of whom are urban dwellers themselves the opportunity to be in a natural world to which they no longer have access. Also they provide a welcome respite from the pressures of everyday living and working. I think this is reflected in the example of Singapore.

Singapore, as we all know, has become a highly urbanized area but, through its botanical gardens, pays tribute to what it was at the time of Raffles and before it became a glorious 20th Century city, and at the same time, is able to make use of this as one of its outstanding tourist resources. Singapore's 70-acre 'Botanic Gardens' is possibly the best known of its green spaces. The

gardens have an orchids' pavilion which houses hybrid blooms named after distinguished visitors to Singapore and culturing of orchid seedlings. Also at the farthest corner of the garden is a nine acre virgin jungle which, though just a patch, boasts of soaring trees and tangles of vines and ferns that provides the very rare delight of a magnificent natural environment. From a historical viewpoint, it is claimed that it was in these gardens where they planted, in 1876, the first five rubber seedlings which marked the beginnings of all Southeast Asia's extensive rubber plantations. These gardens, along with a few others, are an integral part of the attraction of Singapore as a tourist destination.

Malaysia is one other country from which we could learn. While it has not considered creating research-based botanical gardens of a large-scale, it has become famous for its national parks into which gardens have been built. Into these gardens, Malaysia has been able to successfully integrate other supply components of tourism. To name some - there is Mimaland - a park with gardens and jungle trails and recreational facilities for swimming, golf and fishing. And the best known of Malaysia's gardens is the Lake Gardens which is a stretch of Parkland with a glimmer of a lake - the "Green-belt" of Kuala Lumpur. This is a picnic ground, a botanical experience, a boating outing and a joggers' route. The lake gardens is the house of the national monument the parliament house, Istana Tetamu - palace for visiting dignitaries, and the open-air Lake Gardens stadium.

Thirdly, and perhaps, by far the best reason for relating a botanical garden to tourism is what it can do to the environment. In our tourism development policies, we try to bring together the economic and social forces that make up tourism activities to work for a single goal. One important facet of this task is integrating environmental considerations to tourism development, that is, we try and make sure that tourism activities, both existing and future, do not debase the environment and should, in fact, enhance it.

Botanical gardens can be excellent venues for providing environmental conservation-related courses, including public awareness programs, as this can showcase the beauty of a preserved natural environment.

The little that I remember of my biology is that plants absorb carbon dioxide which they use to make up their own food and subsequently emit oxygen. In effect, they help clean the air.

and what better way is there to contribute to enhancing the environment.

Hawaii is one that attaches great importance to environmental preservation. It is perhaps for this reason that its citizens have moved to put up the Pacific Tropical botanical garden – said to be the only national, privately – supported tropical botanical garden chartered by the congress of the USA – principally as a center for scientific research and as an educational resource. It is of note, however, that the garden has also become a tourist spot and is now offering weekly tours to visitors from overseas as well as local enthusiasts, apart of course from visiting botanical professionals and studnets.

All of the countries which have been mentioned and a host of others have been able to make their botanical gardens as one of their tourist attractions. You may have noted, however, that each is, to a certain extent, different from the others but the fact is that they have been able to use these gardens for tourism purposes quite successfully.

In the case of the Philippines, we may have our own botanical gardens but they have not been, I believe, developed to full potential as could be concluded by the necessity to hold a forum such as this. For this alone, the organizers of this symposium merit our congratulations.

A national botanical garden in Metro Manila can very well form part of our support activities here. It can contribute to enhancing the quality of the tourist experience particularly in this region which is our main international gateway and which remains to be our primary tourist destination. Statistics show that 35% of our foreign visitors stay within the MMA with the rest going on to the other regions of the country.

However, while we support the fact that we need a garden that is accessible to our foreign visitors, we also invite careful consideration to other technical and aesthetic factors that could make a successful botanic garden.

When I was invited to speak at this symposium, I took the opportunity of informing the PTA general manager, Atty. Ramon P. Binamira, who is a devout environmentalist himself, about his activity and discussing with him its possible output, as could be gathered from both the letter-invitation and the programme. He was glad to hear about this project, having been impressed himself when he visited England's Royal Botanic Gardens at Kew. He has seen a few others and so is able to recognize the benefits that tour

ism stands to gain from these gardens. I am sure that as all of us here do, he appreciates the fact that moves are being taken towards the establishment of a national botanical garden in Metro Manila.

The garden may be an ambitious project and is one that needs the most careful planning and attention of people and organizations that must or would like to concern themselves with its development. It is rather too bad that resources are always inadequate to meet priorities but a concerted effort can always do the miracle. Thank you.

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F. R. Uyenco*

I had no chance to read the papers presented this morning to enable me to discuss them on good basis. Allow me then to express in a concise but terse manner what I perceive as the role of a botanic garden in the light of my exposure as teacher of Botany, research counsellor to graduate students and administrator.

Doubtless, we all realize the purpose and value of a botanic garden to the academe, research institutions and to the laymen. If a visit is made to the University of Uppsala in Sweden, one is amazed at the implications of its botanic garden. Maintained as priceless treasures of the University are replicas of the plants originally collected by the notable naturalist, Carolus von Linnaeus, neatly growing in carefully-laid rows and arranged in the original scheme of identification and classification established by Linnaeus for them. Here, at once, the visitor is introduced to the history of plant systematics as seen by Linnaeus several years ago, the changes the science has undergone and how/what it is, as recognized in our time. Students of evolutionary systematics, therefore, can draw from Linnaeus' garden, knowledge of historic lineage of taxonomy and the complexities by which plants have been handled and treated that led to the modern concepts of the Science. Indeed, the University of Uppsala, in conserving the plants in living state and in their original nomenclature, is contributing immensely to the fundamental mission of a botanic garden — a living repository of early as well as neo-botanical forms.

One need not go to great depths to discover the early records of indigenous and endemic plant resources as long as a botanical garden can adequately provide these materials in their living state and/or as herbarium specimens. The Kew Gardens in London depict such a scientifically-managed botanic garden. It is not only a place where living materials are maintained (some in huge glass-houses for tropical plants, and a large number on the ground where their aesthetic values are enjoyed by the laymen) but is also the depository of an extensive herbarium collection of all groups of plants. An important adjunct of the Kew Gardens is its Culture collection of fungi and bacteria. The Commonwealth Mycological

Institute located within the gardens carries the second largest culture collection of fungi, next only to that in Baarn, Netherlands. Since 1985, the Kew Gardens has operated an Industrial Services Division in addition to its mandated function of maintaining living and herbarium materials. This Division offers identification, research and training services to industry and other interested parties. The gardens generate a sizable revenue from these services. Short-term courses in the identification, preservation, taxonomy and curating of plants (including the lower forms) are offered regularly for a fee to various levels of the academe. Special research fellowships are awarded to participants from third world countries.

A similar situation exists in the New York Botanical Garden. A great deal of research in all the plant groups is conducted by scientists from all over the world. This can be gleaned from the numerous scientific papers and publications emanating from the garden. Studies on nutrient cycling, effects of different climatic and soil conditions and of complex ecosystems are carried out in greenhouses. It is a common occurrence to see laymen mingling among researchers in the Herbarium. The value of the garden is emphasized to schoolchildren through visits arranged for them by botanic garden officials. Interest in the botanical sciences is introduced early in the education of the young.

Botanic gardens are interesting sources of landscape ideas. In densely-populated areas, they are wholesome sites of recreation and these may constitute an integral part of the tourist infrastructure. The famous Longwood Gardens in Philadelphia and that of Munich Botanical Society in West Germany are examples of this valuable aspect of tourism.

In the Philippines, a program of integrating the plants of the country in a visible scientific entity should be started. Members of learning institutions, researchers in the botanical sciences, naturalists and hobbyists need such a facility. Medicinal plants have caught the attention of the scientific community in recent years and several small collections have sprung up in the last three years. Before many of our forest plants which have not heretofore been recorded and studied (the lichens, especially) get lost as a result of deforestation practices and before our valuable flora disappear with the vanishing resources of the country, a systematic program of keeping genetic resources of flowering plants, lichens and fungi in a botanic garden is imperative. A policy to undertake a last rescue attempt of our indigenous species should be laid down by

* Professor, Institute of Biology, University of the Philippines, Diliman, Quezon City.

the government. I strongly urge the Association of Systematic Biologists of the Philippines to spearhead the establishment of a botanic garden that will usefully serve the academe, researchers and the urban population of Metro Manila. I sincerely believe that such an undertaking can be done with the assistance of the proper government entities.

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Ms. Evelyn Pantig of the Philippine Tourism Authority, delivers a talk on the role of botanic gardens in the development of tourism in the Philippines, during the symposium — "Developing a Strategy for a National Botanic Garden in Metro Manila" held at the National Museum on February 14, 1987.



Part of the audience that attended the symposium.

NOTES ON THE FIRST BOTANIC GARDEN IN THE PHILIPPINES

D. A. Madulid

It is mentioned in publications (e. g. Santos, 1974) that a botanic garden was established in Manila on September 13, 1858, by virtue of a decree by then Governor General Fernando de Norzagaray. This botanic garden located near the Pasig river later became popularly known as Mehan Garden, named after a U.S. Army officer who, during the American regime, took charge of the garden. However, unknown to many was the existence of an older botanic garden situated in Malate Area. This botanic garden is historically important for it was the first to be established in the Philippines and in Southeast Asia. It was constructed only a few years ahead of the famous botanic garden in Calcutta, India (1786), but it is earlier than the garden in Penan, Malaysia (1796), Bogor, Indonesia (1817), Peradeniya, Sri Lanka (1821) and Singapore (1982).

In 1912, the American botanist, Elmer Merrill attempted to trace the history of this old botanic garden "located at the outskirts of the (walled) city of Manila." However, due to lack of relevant primary references Merrill could only make inferences, hence the title of his article "The Pineda monument and the probable site of the first botanic garden in the Philippines."

While researching on Malaspiniana materials in archives and libraries in Spain in 1979 (particularly the Archivo General de Indias in Sevilla and Archivo del Museo Naval in Madrid, Spain) I came across various original manuscripts and records pertaining to this old botanic garden. Inasmuch as many of the relevant information gathered from the aforesaid institutions were not mentioned in Merrill's paper it is here presented to complement the earlier publication and thus give a clearer story about this long forgotten and neglected site.

The first botanic garden in Manila was originally conceived by Juan de Cuellar, a Spanish botanist hired by the "Real Compañia de Manila", in the late 17th century. In his letter to the Gov-

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ernor General, Antonio Porlier, on September 20, 1788 Cuellar proposed to establish a botanic garden to be situated in a lot owned by the "Sociedad Patriótica" in Malate (exact location not mentioned in the letter). Cuellar's plan was to cultivate local ornamental and economic plants in that garden and scientifically study them (Anonymous, 1952). However, his proposal was apparently not given immediate action by Porlier for several follow-up letters were written by Cuellar, one dated January 20, 1790 and another in Juan 27, 1791. Apparently the botanic garden was eventually given the nod of the high official, but the exact date of its establishment could not be ascertained from available records. It is highly probable, however, that it was built in 1791, that is, prior to the arrival of the Malaspina expedition in Manila. When Antonio Pineda, Chief naturalist of the Malaspina expedition, met an untimely death in Badoc, Ilocos Sur in 1792 a big monument was erected in his honor in the vicinity of the botanic garden (Madulid, 1981; 1982).

From a plate published by Zaragosa (1892) in a periodical entitled "La Ilustracion Filipina" (reproduced in Merrill, 1912), the botanic garden was situated in what seems to be an abandoned, open field (planted to some bananas and palm trees). Merrill (1912) thought that the plate in the periodical was the only illustration of the monument and botanic garden extant. However, the present author came across in the archive of the Museo Naval in Madrid a lithograph (c. 30cm x 50 cm) of a painting of the Pineda monument and the surrounding garden made by Fernando Brambilla, one of the artist of the Malaspina expedition (Plate 1). In the lithograph reproduction the Pineda monument looked huge and majestic. The Spaniards referred to it as the "mausoleum of the world", while M. de Juines, the French Ambassador to Peking (1797) described it as "more of a fountain than a mausoleum". The surrounding garden appeared to be in the early stage of development as evidenced by the absence of ornamental trees and shrubs or flowering herbs in the vicinity and instead there were several clumps of tall bamboo trees which are common plants of open fields.

As for the exact location of the old botanic garden, Merrill (1912) mentioned that it is "approximately in the middle of what is now Wright Street, immediately north of the new Malate

School Building." Recent survey of the old monuments in Manila by Salt and Heistand (1971) indicated that the Pineda monument (and the botanic garden) stood originally on the NE corner of what is now called Wright (Street) and Calle Indiana". Today the place is occupied mostly by residential houses (Plate 2).

As to the fate of the Pineda monument, Arenas (1850) mentioned that it stood in the place until 1850 "although no one had cared for it". According to Zaragosa (1892) he still saw the monument standing in 1892 but the surrounding area looked like a small plantation ("sementera"). At the time of American occupation of the Philippines in 1898 the monument was already in a ruinous condition and when Merrill visited the place in 1904 nothing remained of the monument except the square foundation.

As for the botanic garden itself apparently it was later abandoned or converted into a plantation. Presumably, after Juan de Cuellar returned to Spain (after his contract with the Royal Company expired) no one took over the management of said garden.

In 1858 a new botanic garden was established in a site near the Pasig river, bound by the block fronting Arroceros St. near Manila City Hall. The history of this garden will be presented in a separate paper by the present author

Acknowledgement

I wish to thank the Directors and library staff of the Archivo General de Indias, Sevilla and the Archivo del Museo Naval, Madrid, Spain for the use of their research facilities especially the Malaspina documents. I also wish to thank Professor V.H. Heywood, Chairman Botany Department University of Reading, England for his support and the British Council for the study fellowship to Spain in 1977.

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SYSTEMATIC BIOLOGY: ITS RELEVANCE TO ENVIRONMENTAL MANAGEMENT^{*}

Veronica Villavicencio^{**}

It is indeed a great honor and privilege both for me and for the organization I represent, the National Environmental Protection Council (NEPC), to have been invited to address this very select and august assemblage of scientists. Being a non-biologist I was at first hesitant to accept the invitation. However, the importance of your theme for this second annual convention and of the work you do, gave me the courage to come before you this morning.

While systematic biology as a field of science may never achieve "popularization" and mass appeal, certain trends in Environmental Management, not only in the Philippines, but even globally, point to the increasing role that systematics will need to play in the future.

There is today a clearer although still general understanding of the environment and some of its processes in most sectors of the citizenry. Whereas some fifteen to twenty years ago the environment movement was viewed as cleaning up pollution, today's concept of Environmental Management is accepting, albeit sometimes too slowly, a broader pattern of well-balanced, natural resources management. In some circles in fact, the conservation (or wise use) of natural resources is seen as a requisite for development and it is now "fashionable" to talk about *sustainable* development.

NPCS-NEPC

It has been pointed out that past development efforts, based on short-term, fast return on investments formulae, have in fact been counter-productive. The inappropriate use of natural resources — soil, water, plants, animals, air — have degraded, sometimes beyond regeneration, basic life support systems. Bringing the processes of development and environmental management fore together becomes of fundamental importance.

This importance has been recognized globally. The World Watch Institute in one of its reports declares that the world is

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engaged in *biological deficit financing*. We are satisfying current needs at the expense of future generations. This deficit becomes more marked in countries where there is high population growth.

The United Nations Environment Program (UNEP) has likewise recognized this phenomenon and has initiated programs on genetic research for *in situ* conservation of endangered animal and plant genetic resources. Appeals have been made to countries and corporations not to tamper with the planet's bio-productivity.

An issue of the UN's World Forum has estimated that out of a thousand plants currently cultivated in the United States, no more than five or six are indigenous species. The rest come from other regions of the world, notably from the so-called moist tropical rainforest belt. What becomes a matter of urgency, is that with the decrease in tropical forests comes rapid disappearance of wild plant and animal species, upon whose germplasm nations of the world depend on for food and medicine. To complicate matters, these rainforests are not only being physically degraded with concomitant loss of many valuable plant and animal species, but we are also losing species to the gene banks of developed countries. The battle to reclaim, retrieve as well as preserve our remaining plant and animal species necessary for our own survival, is upon us.

In the Philippines we are made to believe by statistics that claim we still have 37% of Philippine forests intact. We are lulled into complacency by the illusive greenery all around us. But it is perhaps much later than we all think.

The country is at present faced by many economic and political problems. It may be too much to point to yet another problem like the disappearance of species or, in keeping with the language of the times, "Biological Deficit Financing." This is perhaps a most serious oversight. For it is our natural resources that are our collaterals, our remaining wealth. All efforts must be exerted to conserve and protect what is left.

The perennial optimists see a silver lining in the darkened clouds of devaluation, inflation, unemployment, and the International Monetary Fund. Perhaps the slow-down of industrial activities will provide the respite that our rivers, land and air so desperately need. But this is only temporary. What we need is the "marriage" of development efforts and environmental conservation or the operationalization of the concept of sustainable development. Happily, we may be getting closer to this big event. Let me cite the following developments.

* Speech delivered during the ASBP general meeting at the Valenzuela Hall, National Research Council of the Philippines, June 23, 1984.

** Executive Director, National Environmental Protection Council, Diliman, Quezon City.

The director-general of the National Economic and Development Authority (NEDA) announced recently that the national development plan update will include an environment component and that NEDA will coordinate the implementation of the National Conservation Strategy or NCS. In a recent dialogue between NEDA and the NEPC there was agreement to include environmental impact studies of major development projects which NEDA evaluates. We consider this break-through to our economic planners a major development in environmental management in the country.

Some of you here may have been involved in the formulation of the NCS, which included assessment reports on six life-support systems: deep sea, coastal, freshwater, cropland, marginal land, tropical moist forest, and the watershed.

The NCS further presents a six-part program on *strategies* for implementation to attain sustainable development. This includes a research component to expand MAB sites, and a program on biological diversity. The biological diversity program seeks to implement the following courses of action:

- Establishment of a task force on species diversity under the National Conservation Secretariat to update the official endangered species list, draft an endangered species act and advise the secretariat on species conservation priorities and required actions.
- Establishment of a natural heritage program to review, among others, national systems of protected areas and advise on species and habitat protection requirements.
- Establishment of a network of scientific reserves to protect the species diversity of the country and intensify the taxonomic work and research on the ecologies of species.
- Establishment of a national depository of specimens by constructing an appropriate facility, and arranging the return of the same which are housed in overseas museums.
- Strengthening of the existing protected area system (national parks, marine reserves and other protected areas).

At the NEPC also, the watershed management sector of our national environmental enhancement program has prioritized project proposals on "an updated inventory and census of wild birds and mammals on selected island in the Philippines," and a "National Survey and Inventory of endangered Philippine flora. I believe that with the implementation of the NCS your work as Systematic Biologists will be in demand and will be given appro-

prate recognition. In the first National Conservation Conference on Natural Resources in 1981, one of you pointed out that previous conservation programs basically lacked the involvement of local taxonomists. I find this occasion a very fitting one to reaffirm our recognition of the importance of your work in conservation efforts. We recognize the paucity of studies on the current status of Philippine biota. Your taxonomic researches should establish the groundwork for further work on genetic diversity. Your classifying and cataloguing of plant, animal, fungal and bacterial species has been recognized as essential steps in the development not only of science but also its application in environmental management.

Within the framework of the NCS, prioritization may be undertaken so that energies and resources are not dissipated. The NEPC would be sympathetic, within our modest means, and subject to the current budget cuts which we hope will be temporary, to consider proposals on systematics which form integral components of the national conservation strategy.

One further activity which may be of interest to your association is the Association of Southeast Asian Nations (ASEAN) action plan on nature conservation. Among the projects under this action plan are the establishment of a network of ASEAN heritage sites, and the formulation of a regional list of endangered species of flora and fauna. The NEPC has already tapped some of your members for these activities and we envisage continuing activities in this field of endeavor. The regional heritage sites are intended for conservation, training and research purposes.

As conservation areas, these heritage sites are to maintain ecological processes and life support systems, preserve genetic diversity, ensure sustainable utilization of species and ecosystems and maintain wilderness, scenic and other cultural values for education, research, recreation and tourism purposes. Master plans to be drawn for each heritage park shall include, but not be limited to management guidelines research on structure and function of ecosystems and education on wilderness values.

In closing, I congratulate the ASBP for initiating activities in this regard. Even if you are still young as an association, I congratulate your initiatives of pooling efforts to prevent the potential "extinction" of your "rare" breed in a situation where truly rational environmental planning and management needs you.

I hope this event paves a way towards a more active cooperation of your association in our national efforts in nature conservation.

THE ROLE OF THE NATIONAL RESEARCH COUNCIL OF THE PHILIPPINES IN THE DEVELOPMENT OF SYSTEMATIC BIOLOGY IN THE PHILIPPINES*

Perfecto K. Guerrero**

It is a distinct pleasure to be here with you today and I am greatly honored to be invited as your guest speaker, although I must confess that engineering is very different from the subject of interest of this gathering.

I know that you, more than anybody else, are more aware of the importance of taxonomy in your chosen field. So we will not dwell at length on that. Rather, I would like to discuss the NRCP's participation in this scientific activity and how we can contribute further to the development of Systematic Biology in the Philippines.

As you are all very well aware of the reorganization of the science and technology system under the now Department of Science and Technology (DOST), you must know that the NRCP has been renamed the Philippine National Science Society (PNSS) and is no longer a Sectoral Council for the Basic Sciences under which Systematic Biology falls. Although no future functions have definitely been assigned to the Society, we in the NRCP feel that in addition to the financial support we extend to the individual researcher, we should also get involved in other productive scientific activities that will enable the Council to effectively implement the thrusts implied in Executive Order No. 128. It is now an accepted fact that science and technology are essential to national development.

The present thrusts of the S & T plan is "technology utilization which would improve productivity, improve our export products with more value added, create opportunities that would generate more employment and effect the transfer of technology that would be both socially and environmentally acceptable."

In line with these thrusts, the PNSS proposed scientific activities that include, among others, inter-sectoral socio- and environmental-impact studies, scientific manpower development (assistance to scientists to develop research, participation in conferences and other scientific activities, thesis grants, research professor

* Keynote speech delivered during the 4th Annual Meeting of the ASBP held at the Master's Hall, National Museum on May 30, 1987.

** President, National Research Council of the Philippines, Bicutan, Taguig, Metro Manila.

ship, etc.), promotion and stimulation of scientific activities, research in the various disciplines to complement the R & D programs of the Sectoral Councils, as well as science and technology documentation and information dissemination. You may wish to secure assistance for your activities that would fall within the areas specified above. I am sure that the Council will favorably consider your request for assistance.

In the past we have been able to extend financial assistance for the publication of your newsletter and printing of handout materials for your First General Meeting. We have also supported priority projects along those lines. In the future, resources permitting, we will continue to be supportive of your activities not only to build up our manpower resources in this field aim to encourage activities that would generate a lively exchange of new ideas that may lead to discoveries of recent advances in techniques. And since the biosphere is within the concern of the systematic biologists, I would like to specifically mention the support being extended by the Council to the survey and feasibility study for the establishment of a biosphere in Palawan proposed by the Philippine National Committee on Man and the Biosphere (MAB) under the Executive Officer Jose V. Gonzales.

Unesco has advanced to MAB Philippines the amount of \$2000 as seed money to initiate the program. The NRCP has approved a counterpart fund of P75,000 to be able to establish a biosphere reserve in Palawan which would serve as a model for demonstrating the value of resources conservation and sustainable development. The proponents hope to identify the various biologically rich and environmentally critical areas in Palawan as well as the priority research needs and management schemes for the selected areas. Eventually, they will draft recommendations for the national recognition and legalization of the selected area as a biosphere reserve and the subsequent nomination for membership to the UN Network on Biosphere Reserves.

As you can see, the NRCP is giving priority to critical areas for research to maximize the available resources of the Council. We will continue to extend our support to worthwhile research projects and other research activities which will enhance our contribution to our national development.

I am sure the systematic biologists will be able to come up with a program of activities that is geared to the attainment of the thrusts of our science system, and for this kind of activity, you can count on the PNSS for active support.

More power to you!

I. Before coming to the Philippines:

- a. Write to the Director, National Museum, P.O. Box 2659, Manila, Philippines, or host institution about your desire to collect biological specimens in the Philippines.
- b. Establish contact with a Filipino counterpart who will collaborate in the collection.
- c. In response to your request an application form will be sent to you. Submit to the National Museum of the Philippines or host institution the accomplished form as soon as possible.
- d. Once approved, a copy of the approved application form will be returned to you and will be accompanied with the copy of the *Code of Conduct* and the *Terms of Agreement* for collectors of biological specimens in the Philippines for your perusal. You will also be notified if your application is not approved.
- e. If you agree to the *Code of Conduct* and *Terms of Agreement* provisions, present a copy of the approved application at the Philippine Embassy or Consulate in your country for visa purposes.
- f. Write us about your decision and arrangement you have made regarding your local accommodation at least 30 days before your arrival.

II. Upon arrival in the Philippines:

Formalize the Terms of Agreement with the National Museum or host institution within 7 days from arrival.

Name : _____

_____	Last Name	_____	First Name	_____	Middle
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Nationality _____ Degree (Sought/Completed) _____

Nature of Employment: Government _____ Private _____

Present Position/Official Designation _____

School/Institution/Agency _____

Address _____

First time to visit Philippines: Yes _____ No _____

If no, state nature of previous visits(s) _____

Field of Specialization _____

Type of specimens to be collected: (e.g. mammals, birds, flowering plants, algae, etc.) _____

Purpose of Collection _____

Duration of Stay _____

Places to be visited (please attach proposed detailed itinerary of travel) _____

List of foreign researchers assisting you in the field and their institutional affiliations _____

List of cooperating Filipino researchers and their institutional affiliations _____

Signature of Applicant

Date _____

Submit the following together with this application form:

1. Two passport-size photographs.
2. Letter of acceptance from Filipino counterpart(s) authorized by or representing the host institutions to cooperate in your collecting activities in the Philippines.

APPROVED:

Director/Head of Agency/Institution
or his duly designated representative

Date _____

To be accomplished in triplicate

AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

This AGREEMENT made and executed this _____ day of _____ 19 _____ in _____ Philippines by and between the _____ represented herein by the Director/Head of the agency/institution or his duly designated representative, with office address at _____, herein after referred to as the PARTY OF THE FIRST PART and _____ affiliated with _____ with office/institution address at _____ hereinafter referred to as the PARTY OF THE SECOND PART;

WITNESSETH

WHEREAS, the PARTY OF THE FIRST PART is a Philippine government agency/accredited research or educational institution engaged in the collection and study of specimens in the Philippines.

WHEREAS, the PARTY OF THE SECOND PARTY is a biological scientist engaged in the collection and study of biological specimens.

WHEREAS, both parties are basically concerned with and interested in the study of Philippine biological specimens for the enhancement and development of the biological sciences.

NOW, THEREFORE, for and in consideration of the above premises and the mutual covenants heretofore mentioned, the parties hereto have agreed as follows:

1. That the Party of the First Part reserves the right to determine which biological specimens can be collected and those which cannot be collected by the Party of the Second Part on the ground that these are rare, endangered, or because of other specific reasons;
2. That the Party of the First Part shall release the specimens collected, except those specified in item 6 of this Agreement, for transport, out of the Philippines;

3. That the Party of the First Part shall allow bonafide researchers ready access to retained specimens;
4. That the biological specimens shall not be brought out of the Philippines without a permit from the Director of the National Museum or his duly authorized representative properly endorsed by the Head/Officer of the Party of the First Part;
5. That complete set(s) of specimens shall be deposited with the National Museum and/or the Party of the First Part by the Party of the Second Part and shall be as representative as possible of the whole collection. In case there is only one specimen, it must be returned to the National Museum or Party of the First Part after study;
6. That holotypes and part of paratypes of new taxa must be deposited in the National Museum or accredited Philippine Museums;
7. That staff member(s) of the Party of the First Part, whenever appropriate, join the collecting trip of the Party of the Second Part. However, travelling and incidental expenses that may arise out of said trip shall be borne by the Party of the Second Part;
8. That the Party of the First Part shall be furnished two (2) copies of the report of specimens collected by the Party of the Second Part. It is understood that the Party of the First Part and/or host who extended cooperation shall be duly acknowledged in publications resulting from his work;
9. That the Party of the Second Part shall extend full and active cooperation in identifying, classifying and preserving the collected biological specimens;
10. That the Party of the Second Part recognizes the right of the Party of the First Part to monitor, supervise and control the collection of biological specimens in the Philippines; and
11. That deliberate disregard of the terms and conditions of this agreement shall result in the automatic cancellation or revocation of said AGREEMENT and shall cause the retention of the collected specimens in favor of the Party of the First Part without prejudice to the application of other measures as provided for by existing laws, rules and regulations.

ASBP Communication

IN WITNESS WHEREOF the parties hereto have hereunto set their signature:

(Party of the First Part)

By.

Director/Head of Agency/
Institution or his duly
designated representative

Party of the Second Part

SIGNED IN THE PRESENCE OF:

Witness

Witness

A GENERAL CODE OF CONDUCT FOR COLLECTORS
OF BIOLOGICAL SPECIMENS IN THE
PHILIPPINES

1. Permission and Conditions
 - 1.1 Secure official permission from an appropriate institution/agency before collecting in national parks, sanctuaries and equivalent reserves.
 - 1.2 Observe the rights of owners or occupants of private lands.
 - 1.3 Obtain code of conduct for collecting particular faunal/floral group from host institution.
 - 1.4 Observe national and local laws, rules and regulations on collecting biological specimens.
2. Collecting in General
 - 2.1 Collect no more specimens than are strictly needed for any purpose.
 - 2.2 Consider photography as an alternative to collecting. It is encouraged that duplicates of photographs or slides be provided the host institution.
3. Collecting rare and endangered species
 - 3.1 Obtain list of rare and endangered species from appropriate agency.
 - 3.2 Collect with the greatest restraint and those species listed as endangered should not be collected at all unless with permission from appropriate institution or agency.
 - 3.3 Species distinct to a locality should likewise be collected with restraint.
 - 3.4 Newly discovered localities for rare and endangered species should be brought to the attention of appropriate authority.
4. Environmental Protection
 - 4.1 Consider the interests of other naturalists; do as little damage as possible.
 - 4.2 Biological specimens should be collected using acceptable methods.
 - 4.3 Plants, soil, stones, litter and dead and decaying wood which have been disturbed in the process of collecting biological specimens should be returned to their original positions.
 - 4.4 Collect seeds, cuttings or young plants rather than uprooting whole mature plants for propagation purposes.
 - 4.5 Respect rules set by national and local conservation organizations.

The preceding guideline is the result of a series of consultative meetings between representatives of various government agencies and scientific organization (ASBP) concerned with collecting biological specimens in the country. It was initiated in March, 1986 by ASBP and actively supported by the Biological Sciences group and Secretariat of the National Academy of Science and Technology. Participants in the drafting of these guidelines were:

Clare R. Baltazar, regular member, ASBP.

Venus J. Calilung, Director, U.P. Natural History Museum, College, Laguna; regular member, ASBP.

Magdalena C. Cantoria, member NAST, Chairman, Pharmaceutical Sciences Division, NRCP; regular member, ASBP.

Paciente A. Cordero, Jr., Curator, Cultural Properties Div., National Museum; regular member, ASBP.

Luz C. Gonzales, Chief, Wildlife Management Section, Parks & Wildlife Division, Bureau of Forest Development.

Pedro C. Gonzales, Curator, Zoology Div., National Museum; regular member, ASBP.

Rizalina M. Legasto, Bureau of Fisheries and Aquatic Resources

Domingo A. Madulid, Senior Researcher, Botany Division, National Museum; President, ASBP.

Melecio S. Magno, Acting President, NAST; Coordinator, Ad Hoc Committee on Collection of Biological Sciences.

Stella Marie R. Ramos, Secretariat, NAST.

Luningning E. Samarita, Secretariat, NAST.

Joventino D. Soriano, member, NAST.

Flordeliz R. Uyenco, Chairman, Biological Sciences Division, National Research Council of the Philippines; regular member, ASBP.

Jose R. Velasco, member NAST.

Carmen C. Velasquez, member NAST; Chairman, Ad Hoc Committee on Collection of Biological Specimens; Honorary member, ASBP.

Gregorio T. Velasquez, member NAST; Honorary member, ASBP.

Amendments to the Constitution of A S B P

Article II – Membership

Section 2. Members shall be classified into six categories: honorary, regular, associate, hobbyist, institutional and foreign.

Section 7. Membership categories

F. Foreign Members

1. Professional and students from other countries involved in taxonomic/systematic studies of Philippine plants or animals may join the association.

Amendments to the By-Laws of A S B P

Article II Fees and Annual Dues

Section I. The membership fee, to be paid upon admission to the association, shall be:

A. Regular	P100.00
B. Associate	50.00
C. Hobbyist	30.00
D. Institutional	500.00
E. Foreign	150.00

Section 2. The annual dues, to be paid one year after having been admitted to the association, and yearly henceforth, shall be:

A. Regular member	P 60.00
B. Associate member	40.00
C. Hobbyist	25.00
D. Institutional	250.00
E. Foreign	100.00

Section 3. The annual dues shall apply from May 1 to April 30 of the following (fiscal) year.

* Ratified by members of ASBP in the 1986 annual meeting.



Plate 3. Tarictic Hornbill, *Penelopides panini*, an endemic bird of Catan-

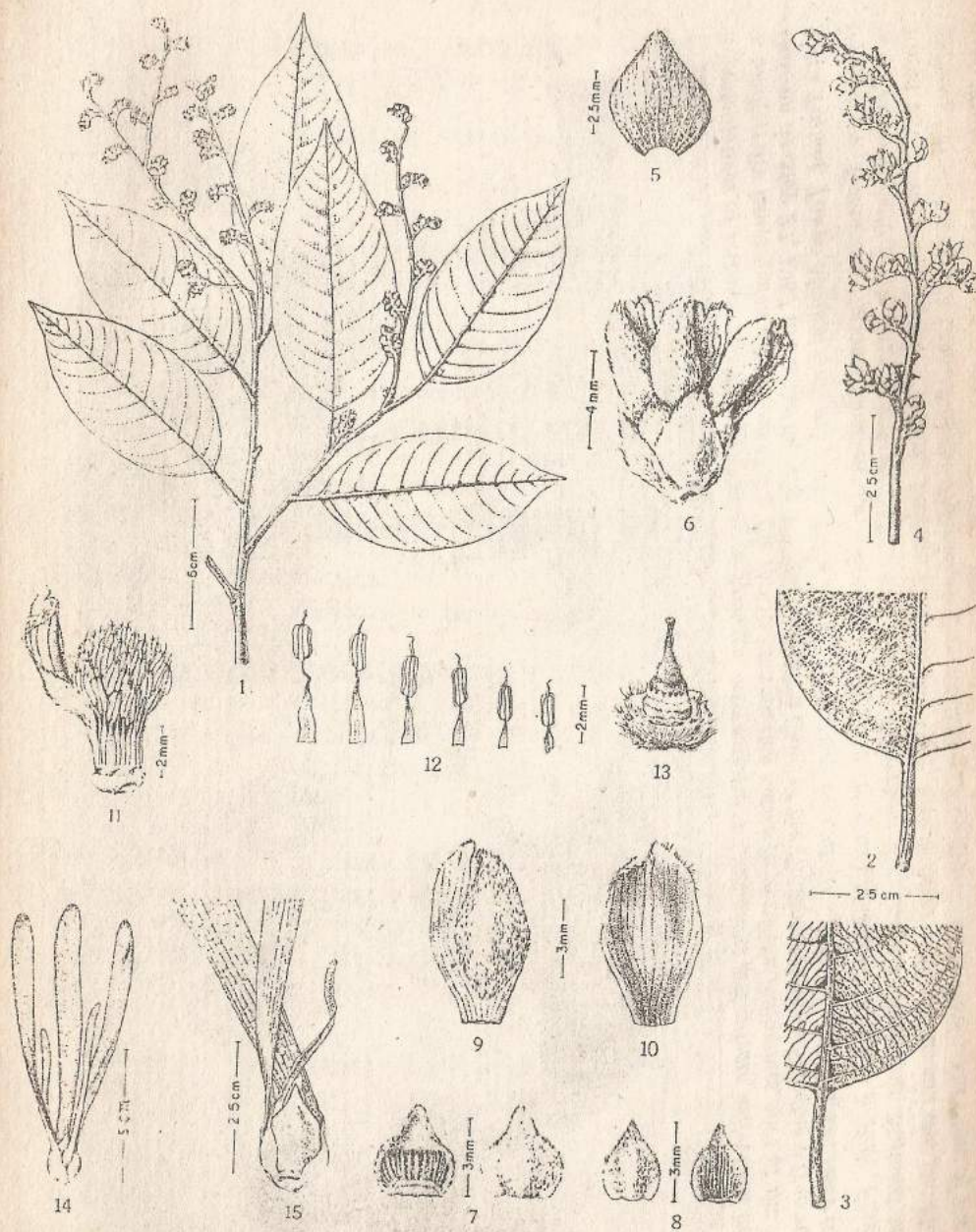


Plate 4. Red lauan, *Shorea negrosensis*, an endemic Philippine tree.

Representatives of research institutes, government agencies, international organizations and private individuals interested in biodiversity issues, particularly concerning the rapidly diminishing native flora of the Philippines, met at the National Museum on May 27, 1987 to discuss the possibility of creating a Flora of the Philippine Project. Standing left to right: Dr. Tsutsumi Tsutsumi, Tokyo Medical University; Dr. Alicia I. Tan, Ministry of Education, Culture and Sports; Dr. Jerry Bisson A. US-AID; Dr. Romaldo National Museum; Dr. Domingo A. Madula, National Museum; Dr. Justo P. Rojo, Forest Products Research Institute; Dr. Jose Vera Santos, University of the Philippines; Dr. Lolita J. Bulacao, National Museum. Seated left to right: Dr. Ransom Dabois, Harbison Foundation; Dr. S.H. Sohmer, Bishop Museum; and Dr. Florideliz Uyenco, National Research Council of the Philippines. This meeting was co-sponsored by ASBP. The Flora of the Philippines Project will be featured in the next issue of ASBP Communication.



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CALL FOR PAPERS

Members of ASBP are requested to send in their contributed papers such as feature articles, personal news, herbarium and museum news, travel or fellowship grants, research grants, field trips, meetings, symposia, training courses, etc. (All pertaining to systematic biology) for possible inclusion in the forthcoming issues of ASBP COMMUNICATION. Non-members may also send in their contributions.

Address contributions in duplicate to:
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The ASBP wishes to thank the National Research Council of the Philippines for providing a grant in the amount of P3,000 to cover the cost of printing the Proceedings of the ASBP Symposium "Developing a Strategy for a National Botanic Garden in Metro Manila" held at the Masters Hall, National Museum on February 14, 1987.

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